

**GENERATING A TEST SUITE FROM AN ABSTRACT STATE MACHINE****ABSTRACT**

A method and apparatus to generate a test suite from an abstract state machine (ASM) involves generating a finite state machine (FSM) for the ASM, and generating the test suite from the FSM. An initial state of the ASM is selected. A first encoding having a plurality of bits is generated to represent the initial state. Each bit of the first encoding represents a result of an evaluation of a non-trivial guard condition of the ASM. The initial state is associated with the first encoding in the data structure for the FSM. At least one other states of the ASM are identified that result from applying at least one actions of the ASM to the initial state. At least one other encodings are generated, each of the at least one other encodings corresponding to one of the at least one other states, and for each one of the at least one other states, when the corresponding of the at least one other encodings is not the same as the any one encoding already associated with a state in the data structure, data is included in the data structure associating the one of the at least one other states and a corresponding of the at least one other encodings.